

### **Abstract of the Disclosure**

An internal combustion engine using variable compression ratio and variable fuel supply to one of two combustion chambers is presented. Varying the compression ratio is accomplished by changing the volume of a single combustion chamber. This, in combination with lean burning, results in a highly efficient prime mover particularly at the low torque outputs needed in passenger car applications. The relationship of compression ratio and fuel feed is varied with engine speed. Burning occurs in two stages, and this results in a clean exhaust. The invention allows very efficient throttling of two-cycle engines to be realized. A concept for supplying air to a two-cycle engine at very good efficiencies is also presented. The combination of these techniques can result in an engine for automotive use that is half the weight of conventional units with a thermal efficiency of 40% or more at average engine output.